(e) If we determine that the certificate of conformity would not cover your new or modified vehicle, we will send you a written explanation of our decision. In this case, you may no longer produce these vehicles, though you may ask for a hearing for us to reconsider our decision (see § 1051.820).

(f) You may ask to change your FEL in the following cases:

(1) You may ask to raise your FEL for your engine family after the start of production. You must use the higher FEL for the entire family to calculate your average emission level under subpart H of this part. In your request, you must demonstrate that you will still be able to comply with the applicable average emission standards as specified in subparts B and H of this part.

(2) You may ask to lower the FEL for your engine family after the start of production only when you have test data from production vehicles indicating that your vehicles comply with the lower FEL. You may create a separate subfamily with the lower FEL. Otherwise, you must use the higher FEL for the family to calculate your average emission level under subpart H of this part.

(3) If you change the FEL during production, you must include the new FEL on the emission control information label for all vehicles produced after the change.

§ 1051.230 How do I select engine families?

(a) Divide your product line into families of vehicles that you expect to have similar emission characteristics. Your engine family is limited to a single model year.

(b) Group vehicles in the same engine family if they are the same in all of the following aspects:

(1) The combustion cycle.

(2) The cooling system (water-cooled vs. air-cooled).

(3) Configuration of the fuel system (for example, port fuel injection vs. carburetion).

(4) Method of air aspiration.

(5) The number, location, volume, and composition of catalytic converters.

(6) Type of fuel.

(7) The number, arrangement, and approximate bore diameter of cylinders.

(8) Evaporative emission controls.

(c) In some cases you may subdivide a group of vehicles that is identical under paragraph (b) of this section into different engine families. To do this under normal circumstances, you must show you expect emission characteristics to be different during the useful life or that any of the following engine characteristics are different:

(1) Method of actuating intake and exhaust timing (poppet valve, reed valve, rotary valve, etc.).

(2) Location or size of intake and exhaust valves or ports.

(3) Configuration of the combustion chamber.

(4) Cylinder stroke or actual bore diameter.

(5) Exhaust system.

(d) In some cases, you may include different engines in the same engine family, even though they are not identical with respect to the things listed in paragraph (b) of this section.

(1) If different engines have similar emission characteristics during the useful life, we may approve grouping them in the same engine family.

(2) If you are a small-volume manufacturer, you may group engines from any vehicles subject to the same emission standards into a single engine family. This does not change any of the requirements of this part for showing that an engine family meets emission standards.

(e) If you cannot appropriately define engine families by the method in this section, we will define them based on features related to emission characteristics.

(f) You may ask us to create separate families for exhaust emissions and evaporative emissions. If we do this, list both families on the emission control information label.

§ 1051.235 What emission testing must I perform for my application for a certificate of conformity?

This section describes the emission testing you must perform to show compliance with the emission standards in subpart B of this part during certification.

(a) Test your emission-data vehicles using the procedures and equipment specified in subpart F of this part. Where specifically required or allowed, test the engine instead of the vehicle. For evaporative emissions, test the fuel system components separate from the vehicle.

(b) Select from each engine family a test vehicle or engine, and a fuel system for each fuel type with a configuration that is most likely to exceed the emission standards, using good engineering judgment, consider the emission levels of all exhaust constituents over the full useful life of the vehicle.

(c) You may use previously generated emission data in the following cases:

(1) You may submit emission data for equivalent engine families from previous years instead of doing new tests, but only if the data show that the test vehicle or engine would meet all the requirements for the latest vehicle or engine models. We may require you to do new emission testing if we believe the latest vehicle or engine models could be substantially different from the previously tested vehicle or engine.

(2) You may submit emission data for equivalent engine families performed to show compliance with other standards (such as California standards) instead of doing new tests, but only if the data show that the test vehicle or engine would meet all of this part's requirements.

(3) You may submit evaporative emission data measured by a fuel system supplier. We may require you to verify that the testing was conducted in accordance with the applicable regulations.

(d) We may choose to measure emissions from any of your test vehicles or engines (or other vehicles or engines in the engine family).

(1) If we do this, you must provide the test vehicle or engine at the location we select. We may decide to do the testing at your plant or any other facility. If we choose to do the testing at your plant, you must schedule it as soon as possible and make available the instruments and equipment we need.

(2) If we measure emissions on one of your test vehicles or engines, the results of that testing become the official data for the vehicle or engine. Unless we later invalidate this data, we may decide not to consider your data in determining if your engine family meets the emission standards.

(3) Before we test one of your vehicles or engines, we may set its adjustable parameters to any point within the physically adjustable ranges (see §1051.115(c)). We may also adjust the air-fuel ratio within the adjustable range specified in §1051.115(d).

(4) Calibrate the test vehicle or engine within normal production tolerances for anything not covered by §1051.115(c) and (d) of this section.

(e) If you are a small-volume manufacturer, you may certify by design on the basis of preexisting exhaust emission data for similar technologies and other relevant information, and in accordance with good engineering judgment. In those cases, you are not required to test your vehicles.

This is called "design-certification" or "certifying by design." To certify by design, you must show that the technology used on your engines is sufficiently similar to the previously tested technology that a person reasonably familiar with emission-control technology would believe that your engines will comply with the emission standards.

(f) For fuel tanks that are certified based on permeability treatments for plastic fuel tanks, you do not need to test each engine family. However, you must use good engineering judgment to determine permeation rates for the tanks. This requires that more than one fuel tank be tested for each set of treatment conditions. You may not use test data from a given tank for any other tanks that have thinner walls. You may, however, use test data from a given tank for other tanks that have thicker walls. This applies to both low-hour (*i.e.,* baseline testing) and durability testing. Note that §1051.245 allows you to use design-based certification instead of generating new emission data.